Remarks

Claims 1, 3 – 5, 7 – 20, 22, 24– 27, 29 – 31, 33- 41, and 44 remain pending and reconsideration of those claims is requested. The Examiner's careful review of the claim terminology and the nexus between claim elements has been considered. If the Examiner still believes there are problems in syntax or structure it is hoped a call will be made to the undersigned attorney to discuss those perceived problems.

The Office Action stated that in claim 1 there seemed to be no nexus between steps a-b and the remainder of the steps. Further the Office Action stated that there was no clear relationship between the runs and component processing machines. Claim 1 has been amended and provides a nexus between steps a-b and the remainder of the steps. In addition, claim 1 as amended clarifies the relationship between both monitoring a sequence of runs and monitoring the status of component processing machines on a production control workstation. A similar rejection was made for claim 33 and this claim has been amended in a similar fashion. Accordingly, Applicant believes such amendments cure the rejections to claims 1 and 33 under 35 U.S.C. § 112 second paragraph, and notice to that effect is respectfully requested.

The Office Action stated that there seemed to be no nexus between step a and the remainder of the steps. In particular, the Office Action stated that in claims 5 and 34 that there were no clear relationship between the runs and component processing machines. Claims 5 and 34 have been amended and provide a relationship between the sequence of runs and component processing machines by communications to a production control workstation. Accordingly, applicants believes such amendments cure the rejections to claims 5 and 34 under 35 U.S.C. § 112 second paragraph, and notice to that effect is respectfully requested. In a similar manner applicants have addressed the other objections under 35 U.S.C. § 112 second paragraph to the other pending claims and those objections are traversed.

Claim 1 features a method of controlling production run sequences of insulating glass units by scheduling a sequence of runs of insulating glass units to be produced for assembly to form a window or door at a plurality of glazing lines. This schedule may or may not be the most efficient schedule so the method also monitors a status of said sequence of runs on a production control workstation and monitors a status of one or more computer controlled insulating glass

unit component processing machines on the production control workstation by means of electronic communication between the processing machines and the production control workstation. Additionally, the process monitors a queue of insulating glass units from the insulating glass component processing machines to be assembled to a window or door at the glazing lines on a visual display at the production control workstation. The process provides a user actuated input at the production control workstation for adjusting the production by the processing machines and altering production within the sequence of runs in response to the user actuated input at the production control workstation based on one of the status of the runs, the status of the one or more insulating glass unit component processing machines, and the queue of insulating glass units at the glazing lines.

Claim 1 was substantively rejected over the combination of Weaver et al (US 5,446,671) and Schwaiger et al. (US 6,294,044).

Weaver et al monitor a number of product types, compare the number of each product type to several values associated to each product type, then sets or clears flags to stop or allow the processing of each product type. The invention featured in claim 1 monitor a number of destinations, compares the number of production runs meant for each destination with a value associated with each destination, then displays the result to allow the operator to process each production run accordingly. The invention of claim 1 allows the user to monitor the production run sequence for each machine and allows the operator to change that sequence.

Weaver et al does not specifically refer to insulating glass units, but does mention computerized manufacturing control systems. Schaiger et al does not specify a glazing line so it would not be obvious for the skilled artisan to combine Weaver et al's system to an insulating glass manufacturing process having a glazing line. Schwaiger et al's patent refers to vinyl window fabrication which does not involve glazing of completed insulating glass units to form a window or door unit. Additionally, nowhere does Weaver et al show or suggest the step of monitoring a queue of insulating glass units from the insulating glass component processing machines to be assembled to a window or door at glazing lines on a visual display at the production control workstation. Nor does Weaver et al suggest providing a user actuated input at the production control workstation for adjusting the production by the processing machines.

Since there is a missing element of the recited process the basis of rejection does not form a prima facie basis for an assertion of obviousness and therefore claim 1 is allowable.

Claims 3 and 4 depend from allowable claim 1 and are also allowable. Independent claim 33 is a machine readable claim amended consistent with the amendments to claim 1 and is also allowable.

Claim 5 features a method of controlling production run sequences of insulating glass units. This claim features monitoring a status of one or more insulating glass component processing machines, electronically communicating the status of the one or more insulating glass component processing machines to a production control workstation, monitoring a status of runs of insulating glass components produced by the one or more insulating glass component processing machines and indicating the status on a visual display. A user interface or input is provided for altering the sequence of runs of insulating glass units based on the status of the runs of insulating glass components. These features of claim 5 are neither shown nor suggested by the prior art cited in the last office action and therefore claim 5 is allowable.

Claims 7 and 8 depend on allowable claim 5 are also allowable. Claim 34 is a machine readable claim corresponding to allowable claim 5 and is also allowable.

Claim 9 recites identifying a low queue condition corresponding to a shortage of insulating glass units at an identified glazing line. The low queue condition is electronically communicated to a production control workstation and displayed on a visual display at the production control workstation. The sequence of runs is altered in response to a user controlled input at the production control workstation and this process is neither shown nor suggested by the prior art cited by the examiner. According claim 9 and dependent claims 10 – 19 are allowable. Computer readable claims 35 and dependent claims 36 – 40 corresponding to these claims are also allowable.

Claim 20 recites a method of controlling production run sequences of insulating glass units by creating a sequence of runs of insulating glass units to be produced for assembly into a window or door at a plurality of glazing lines. A low queue condition of insulating glass units is identified at a particular glazing line and the fact of the low queue condition is electronically communicated to a production control workstation. A run of insulating glass units required ~~by~~ to increase a queue of insulating glass units at the identified glazing line is prioritized. Finally, the sequence of runs is altered to produce the prioritized run of insulating glass units earlier in time.

As stated above with regard to claim 1, there is no suggestion for use of the process of Weaver et al on the window manufacturing process and there is no mention of insulating glass units in Schwaiger et al so there cannot be a suggestion of the process of claim 20. Claim 20 and dependent claim 22 are allowable as is computer readable claim 41.

Claim 24 recites a system having one or more controller or ancillary computers including a programmable device in communication with insulating glass component processing machines. The one or more computers create a sequence of runs of insulating glass components to be produced for assembly into insulating glass units at an assembly station and monitor a status of one or more insulating glass component processing machines. A status of the insulating glass component processing machines is communicated to a production control workstation where the status of the insulating glass component processing machines is displayed on a visual display. A user actuated input is provided at the production control workstation for altering the sequence of runs based on the status of the insulating glass component. These features are neither shown nor suggested by the art and therefore claim 24 is allowable.

Claim 25 recites a system for controlling production run sequences of insulating glass units. It features window component processing stations for producing assembled insulating glass units and a plurality of glazing lines where assembled insulating glass units are assembled into a window or door. One or more controller or ancillary computers include a programmable device in communication with the window component processing stations and the plurality of glazing lines. The computers create a sequence of runs of insulating glass units to be produced for assembly to window or door sash at the plurality of glazing lines and monitor a number of runs of assembled insulating glass units in queue to be assembled to window or door sash at a given glazing line of the plurality of glazing lines. They also identify a low queue condition at an identified glazing line and highlight a next available run of insulating glass units that can be produced for the identified glazing line on the production control workstation. The computers also alter a sequence of runs to produce assembled insulating glass units in the next available run for routing to the identified glazing line. The features recited in claim 25 are neither shown nor suggested in the prior art and therefore this claim and dependent claims 26, 27 and 29 are also allowable.

Claim 30 features a system for controlling production run sequences of insulating glass units having window component processing stations for producing assembled insulating glass units and a plurality of glazing lines where assembled insulating glass units are assembled into a window or door. One or more controller or ancillary computers include a programmable device in communication with the window component processing stations and the plurality of glazing lines. The computers create a sequence of runs of insulating glass units to be produced for assembly to window or door sash at a plurality of glazing lines and identifying when a number of runs of insulating glass units in queue at an identified glazing line reaches a predetermined queue lower limit. The computers then prioritize a run of insulating glass units required by the identified glazing line and altering the sequence of runs to produce the prioritized run of insulating glass units earlier in time.

Weaver et al monitor a number of product types, compare the number of each product type to several values associated to each product type, then sets or clears flags to stop or allow the processing of each product type. The invention featured in claim 30 monitors a number of

glazing lines and identifies glazing lines needing more insulating glass units. A run of such units is then prioritized and the sequence of production runs the computer maintains is altered. This structure is neither shown nor suggested in the prior art and therefore this claim and dependent claim 31 are allowable. In this regard there is no mention in the art cited to prioritize a remake or a rush run.

Claim 44 recites a method of controlling production run sequences of insulating glass units by scheduling a sequence of runs of insulating glass components to be produced for assembly into insulating glass units at an assembly station and monitoring a number of runs of completed insulating glass components in queue to be assembled into insulating glass units at the assembly station. The process also identifies a low queue condition corresponding to a shortage of insulating glass components of a given type at the assembly station and electronically communicates the low queue condition of the given type of insulating glass component to a production control workstation and displays the low queue condition on a visual display at the production control workstation. A user input is provided for altering the sequence of runs to resolve the low queue condition of the given type of insulating glass component at the assembly station. This process is neither shown nor suggested and therefore claim 44 is allowable.

All pending claims are in condition for allowance and a prompt notice of allowance is solicited. The Commissioner is hereby authorized to charge any required fee under 37 C.F.R. § 1.17 in connection with this communication to our Deposit Account No. 23-0630.

Respectfully submitted,

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